

CLAIMS

What is claimed is:

1. A method of storing and playing a broadcast stream, the method comprising:

separating channel packets and associated packets for a channel segment

from a multiplexed stream;

attaching a time stamp to each of the channel packets;

storing the channel packets and associated packets;

comparing the time stamp of each channel packet to a ready time; and

transferring channel data from the channel packet to a player device for
presentation to a user, if the time stamp of the channel packet equals the ready
time.
2. The method of claim 1, further including initializing a clock to the time stamp of a
first packet.
3. The method of claim 2, wherein the ready time is the current time of the clock.
4. The method of claim 1, further including calculating the ready time based on the
difference of the time stamp of a first packet and a clock time.

5. The method of claim 1, wherein if the time stamp does not equal the ready time, further including determining the time remaining for the time stamp to equal the ready time and the transferring is delayed for the time remaining.

6. The method of claim 1, wherein the storing is by direct memory access.

7. The method of claim 6, further including interrupting a processor with the storing.

8. The method of claim 1, further including removing the channel packets from storage by direct memory access.

9. The method of claim 8, further including interrupting a processor with the removing of the channel packets.

10. The method of claim 1, further including retrieving a descrambling key from an associated packet for a channel packet prior to transferring the channel data.

11. A broadcast processing system for storing and playing data, comprising:
- a) demultiplexer to separate channel packets and associated packets for a channel segment from a multiplexed stream;
 - b) time stamp unit to attach a time stamp to each of the channel packets;
 - c) packet storage unit to store the channel packets and associated packets;
 - d) time comparator to compare the time stamp of each channel packet to a ready time; and
 - e) transfer interface to transfer channel data from the channel packet to a player device for presentation to a user, if the time stamp of the channel packet equals the ready time.
12. The system of claim 11, further including a clock to be initialized to the time stamp of a first packet and wherein the ready time is the current time of the clock.
13. The system of claim 11, wherein the ready time is based on the difference of the time stamp of a first packet and a clock time.

14. The system of claim 11, further including a delay unit to pause the transfer of the channel data if the time stamp does not equal the ready time.
15. The system of claim 11, further including a direct memory access controller to directly access the packet storage unit.
16. The system of claim 15, wherein the direct memory access controller is to interrupt a processor with access of the packet storage unit.
17. The system of claim 11, further including a descrambling unit for decrypting a channel packet by use of an associated packet.
18. A computer readable medium having stored therein a plurality of sequences of executable instructions, which, when executed by a processor, cause the system to:
- separate channel packets and associated packets for a channel segment from a multiplexed stream;
 - attach a time stamp to each of the channel packets;
 - store the channel packets and associated packets;

compare the time stamp of each channel packet to a ready time; and

transfer channel data from the channel packet to a player device for presentation to a user, if the time stamp of the channel packet equals the ready time.

19. The computer readable medium of claim 18, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to initialize a clock to the time stamp of a first packet.
20. The computer readable medium of claim 18, wherein the ready time is a current time of the clock.
21. The computer readable medium of claim 18, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to calculate the ready time based on the difference of the time stamp of a first packet and a clock time.
22. The computer readable medium of claim 18, further including additional sequences of executable instructions, which, when executed by the processor

further cause the system to pause the transfer of the channel data if the time stamp does not equal the ready time.

23. The computer readable medium of claim 22, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to determine the time remaining for the time stamp to equal the ready time and the pause is for the time remaining.
24. The computer readable medium of claim 18, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to store by direct memory access.
25. The computer readable medium of claim 24, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to interrupt a processor to transfer a packet to a decoder, prior to the transferring of the channel data.
26. The computer readable medium of claim 18, further including additional sequences of executable instructions, which, when executed by the processor

further cause the system to remove the channel packets from storage by direct memory access.

27. The computer readable medium of claim 26, further including additional sequences of executable instructions, which, when executed by the processor further cause the system to interrupt a processor with removing of the channel packets.

28. A method of storing and playing a broadcast stream, the method comprising:
- separating channel packets and associated packets for a channel segment from a multiplexed stream;
 - attaching a time stamp to each of the channel packets;
 - storing the channel packets and associated packets;
 - comparing the time stamp of each channel packet to a ready time;
 - transferring channel data from the channel packet to a player device for presentation to a user, if the time stamp of the channel packet equals the ready time; and
 - determining the time remaining for the time stamp to equal the ready time and pausing the transferring of the channel data for the time remaining, if the time stamp does not equal the ready time.

29. The method of claim 28, wherein the ready time is a current time of a clock.
30. The method of claim 28, further including calculating the ready time based on the difference of the time stamp of a first packet and a clock time.